6.4: Discussion

Discussion

Write a minimum one-page (12 font, single spaced) discussion on the experiment conducted this week. Address **at least one question in each category** as fully as possible integrating the collected data, providing explanations for the observed trends, and evaluating whether your original assumptions about the experiment were validated by the results. **The assignment will be graded on completeness, clarity of the explanations and the meaningful integration of the collected and calculated data.** Correct grammar and appropriate format for the chemical formulae and chemical reactions is expected. **You may use the outline included at the end of this document on how to build your essay to address each category.**

1. (Existing knowledge, research, and views) Describe the properties of the iron, sand and sodium chloride that were used in the separation process.

2. (Analysis) Classify the mixtures created at each step in the process of separating the iron, sand, and salt mixture as homogeneous or heterogeneous.

3. (Acquiring competencies) Describe the folding of the filter paper. Provide at least one argument why the folded filter paper would work better than the unfolded one.

4. (Acquiring competencies) Describe the main steps in a filtration.

5. (Acquiring competencies) Provide at least one argument for washing the solids during filtration.

6. (Acquiring competencies) Describe how you used a magnet to separate the iron filings. Provide at least one argument for using the plastic bag.

7. (Assumptions) Predict the expected % recovery for your sand, salt, and iron. Provide a supported argument for your choice. Provide at least one assumption that must be true to explain the discrepancy between the original and recovered masses.

8. (Assumptions) Compare the % recovery from your experiment with the expected % recovery. Provide at least one assumption that must be true to explain the discrepancy between the two values.

9. (Analysis) Compare the % recovery values from your group. Comment on the accuracy and precision of the experiment.

10. (Existing knowledge, research, and views) Describe a large-scale application of separations that has an impact on our everyday lives.

Recommended discussion outline:

The mixtures we studied in this experiment are … and can be classified as ...

Separation techniques are dependent on the properties of and states of matter. Filtration requires …

In this experiment we assumed ....

In this experiment, we recovered …% of salt, ….. % iron and … % of sand. The recovery values of our group are (precise or accurate?), because ...

An application of separation that I found fascinating is … and it works like this: ….

The purpose of the experiment was … By performing this experiment, I learned ...